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reasons, only 5% of patients had local complications like bleeding from puncture site and hematoma at access site. Radial loops, subclavian tortuosity and arterial lusoria were encountered in a minority of patients. Radial artery patency was close to 98 percent (as accessed by telephonic follow up). 7 years follow up of patients revealed majority of patients were doing well on medical management.

Conclusion: Trans Radial outpatient diagnostic procedures can be performed with remarkable success and safety with excellent long term outcome.

Correlation of individual lipid fraction with carotid intima-media thickness in coronary artery disease patients attending a preventive cardiology clinic

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Introduction: Dyslipidemia has been accepted as a risk factor for cardiovascular diseases and a marker of atherosclerosis. Data is scarce regarding the impact of individual lipid fractions on atherosclerosis. The present study aims to ascertain the association of individual lipid fractions on CIMT in patients presenting with coronary artery disease (CAD).

Methodology: A cross sectional assessment of records of 357 patients with CAD, attending the preventive cardiology clinic in New Delhi, between 2008 and 2013 was undertaken. Details of medical history, physical examination, biochemical parameters, electrocardiograms, and CIMT measures were recorded.

Results & Discussion: Of the 357 patients in this study, 84 were females, 273 were males, with a mean age of 48.6±13.17 years, of whom 61 were known diabetics and 101 had long standing hypertension.

The mean CIMT (mCIMT) values for 357 individuals were 0.77±0.23 mm. With increasing age, there was an increase in mCIMT (correlation coefficient=0.23, $p<0.001$). Mean TC was 153.8±39.5 mg/dl, HDL was 35.8±9.66 mg/dl, LDL was 89.9±30.6 mg/dl, TG was 135.9±80.3 mg/dl.

The HDL cholesterol level was found to have a statistically significant correlation with mCIMT (coefficient= -0.054, $p=0.06$). An increase in HDL cholesterol was associated with a decrease in mCIMT. No statistically significant correlation was found between the rest of the parameters and mCIMT. An analysis of variance done after categorizing the total cholesterol levels into <150 mg/dl, 150-200 mg/dl, and >200 mg/dl groups showed that there was statistically significant difference in the mCIMT ($p<0.05$)

Conclusions: Among the commonly measured lipid fractions, HDL cholesterol was found to have a statistically significant negative correlation with mCIMT, suggesting that increasing HDL cholesterol should be an important treatment goal in patients with CAD to prevent increase in CIMT which would translate into decreasing atherogenesis and cardiovascular mortality.

Premature graying of hair: An independent risk marker for coronary artery disease in smokers - A retrospective case control study

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Introduction: Premature graying of hair as a risk marker among young smokers has evoked lot of interest among clinicians as it has potential of identifying CAD at a very early stage. The literature search has not revealed any study that assessed premature graying of hair as an independent marker of CAD in smokers. Hence, the present study was planned.

Material and Methods: The present single-centre retrospective study enrolled a total of 62 consecutive chronic smokers (≤ 45 years) (Group I) and 60 consecutive young CAD patients (≤45 years) who were chronic smokers (Group II). Another group comprising of 114 patients (≤45 years) having no smoking history and no cardiac ailments either (Group III) was enrolled as control population. All subjects were males. A detailed history and clinical examination regarding smoking habit, presence of graying of hair (more than 25% of scalp and/or beard), measurement of waist circumference, blood pressure, fasting, and post prandial blood glucose, lipid profile and carotid intima media thickness was done in both groups.

Results: The carotid intima media thickness, dyslipidemia and blood pressure were significantly higher in group I and II as compared to group III.

When the groups were compared for graying of hair, it was found that the group II (ie smokers and CAD) had maximum incidence of graying which was significantly higher than the control as well as smoker group.

The presence of premature graying of hair was associated with a 3.24 times the risk of CAD on multiple logistic regression analysis.

Conclusion: The present study establishes an association between premature graying of hair and development of CAD and/or carotid atherosclerosis in smokers as well as non-smokers. The presence of premature graying of hair was associated with an increased risk of CAD. Premature greying of hair can be used as preliminary evidence by clinicians for classifying patients at risk for premature CAD especially in smokers.

Benefit of ivabradine combined with beta-blocker in comparison with increased dose of beta-blocker in stable angina

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Background: Study was done to see the effect of Ivabradine + β Blocker as compared to increasing dose of β Blocker in patients with Stable Angina.

Method: 30 patients with Stable Angina and moderate LV Systolic dysfunction already on 5 mg of Bisoprolol were randomized into 2 groups:- Group 1 (n=15) received Ivabradine (5-7.5 mg bid) in addition to Bisoprolol 5 mg OD, while in Group 2 (n=15), Bisoprolol dose was escalated to 10 mg OD. Patients underwent treadmill test and echocardiography at baseline and after 2 months.

Results: Mean resting heart rate decreased in both groups from 80±5bpm to 60±5bpm ($p<0.001$) in Group 1 and 80±5bpm to 60±5bpm ($p=0.002$) in Group 2. The resting heart rate did not differ significantly between the two groups. However, more patients became asymptomatic in Group 1 than in Group 2. Addition of Ivabradine also improved exercise capacity as evident on Stress

Test. Chronotropic response also significantly improved with Ivabradine.
Conclusion: Combining Ivabradine with low dose Bisoprolol in Stable Angina patients produces additional anti-anginal and anti-ischaemic benefits and improves chronotropic reserve.

Significance of troponin levels in patients with stable coronary artery disease

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Background: This study was done to determine the significance of Troponin release in patients with stable Coronary Artery Disease (CAD) by comparing Troponin I levels with CT angiography characteristics of atherosclerotic plaque.
Methods: Troponin I levels were determined in 50 consecutive patients with Stable Angina, who underwent CT coronary angiography (CTA) for clinical indications. CTA was used to assess: (1) Coronary Calcification, (2) Stenosis Severity, (3) Non-Calcific Plaque Volume.
Results: In 10 patients, Troponin I was > 0.4 (range 0 - 0.34). Weak correlation was found between Troponin I and Calcium scoring $p<0.001$, $r=0.45$ while a stronger correlation was found between Troponin I and Total Non-Calcified Plaque Burden ($p<0.001$, $r=0.79$). Patients with non-calcific plaque had significantly higher Troponin I values than those with normal vessels or those with only calcified lesions.
Conclusion: Chronic clinically stent rupture of non-calcified plaque with micro-embolisation may be a potential source of Troponin elevation. Thus Troponin I may serve as a biomarker for "vulnerable" coronary lesions even in presumably stable Coronary Artery Disease (CAD).

Duration of vascular dysfunction of brachial artery and radial artery after trans-radial access for coronary angiography

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Background: Prior studies have demonstrated that Brachial Artery endothelial dysfunction after trans-radial cardiac catheterization for diagnostic coronary angiography. However, the duration of this endothelial dysfunction was unknown.
Methods: A total of 30 patients who are undergoing coronary angiogram through transradial route were included. Using high-resolution Vascular Ultrasound Endothelium-dependent, flow-mentioned vasodilation (FMD) and administration of sublingual nitroglycerin (endothelium-independent dilatation) of Ipsilateral Brachial Artery (IRA) & Ipsilateral Radial artery (IBA) was measured before and at 6 and 24 h, one week and one month after catheterization. The left-sided Brachial Artery (BA) & Radial Artery (RA) served as a control.
Results: Baseline FMD was 14.2 ± 4.9% in the right BA, 14.0 ± 5.1 % in the left BA ($p = 0.88$) and baseline FMD was 14.2 ± 6.8% in the right RA, 14.5 ± 6.2% in the left RA ($p = 0.85$). BA FMD was significantly decreased in the right intervention arm when compared to control at 6 hours and 24 hours (4.9 ± 6.1% ,14.7 ± 5.3%, p value 0.000), (5.8 ± 7.2%, 15.1 ± 5.3%, p value 0.000). RA FMD at 6 hours was 3.2 ± 5.5% in the right RA, 15.5 ± 6.4 % in the left RA (p value 0.000) and at 24 hours FMD of RA not statistically significant. BA & RA FMD was at 1 week, 1 Month Test were not statistically significant from the control. In contrast, both NMD response and FMD/NMD ratio were unaffected by the intervention in the control arm. Kaplan-Meier Curve was drawn for the probability of recovery of BA & RA endothelial dysfunction after transradial intervention showing that 98% FMD recovered at 30 days.
Conclusion: Trans-radial cardiac catheterization leads to vascular endothelial dysfunction of the IBA with recovery of the vascular diameter by one week post procedure.

Comparison of clinical profiles of patients with acute coronary syndrome (ACS) of the age above and below 40 years

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Background: This study comparatively few studies have focused on the epidemiology and clinical profile of ACS in young patients, therefore this study was aimed to evaluate differences in risk factors, demography, clinical presentation, complications, angiographic finding & mortality in patients with acute coronary syndrome of the age above & below 40 yrs.
Methods: This is a prospective study of 200 patients of ACS done in tertiary health centre in Mumbai. Patients were divided into below & above 40 yrs of age. Data collected including the history, risk factors ,mode of presentation ,duration of symptoms ,treatment received and investigations done i.e. lipid profile, homocysteine, ,blood sugars ,Trop T, ECG, Chest X-ray, 2D echo, (CAG).
Results: Among 200 patients, 38 (19%) were young & 162 (81%) were older than 40 yrs with Male: female sex ratio of 5.3:1 and 2.88: 1 respectively. Atypical mode of presentation was seen more among the ACS patient above 40 yrs of age (33.7%) as compared with the young patients (8 %). In STEMI patients, delayed presentation (>12 hrs of index pain) was seen in 30 patients in older age group (18.2%) while same in young group was seen in 5(13.15%)patients ; commonest cause being delay in transportation. Elderly were also more likely to have contraindications for thrombolysis (20.37Vs 7.8 %) Commonest risk factor in young group was tobacco consumption (73.68%) followed by dyslipidemia (36.8%),& in old group, HTN(58%) followed by DM(40.74%)., Hyperhomocysteinemia was seen in 20 patients in young group (52.63%) and in 31 (19.13%) in old group. Complications were seen in total 58(29%) patients, young- 7 (18.42%) & old- 52 (32%) with most common complication in young group was arrhythmias while in older group it was acute pulmonary oedema .Mortality was higher in elderly patient group (6.17Vs2.63%). Commonest Angiographic finding in young patient was Single vessel disease (52.63%). In older group double vessel disease was more common 40.12 % followed by single vessel disease in 30.86 %.
Conclusions: Though prevalence of ACS is more in elderly population, young patients are also getting affected increasingly, but with a bit different clinical profile. Younger often presented with typical presentation, has different risk factor profile, received early aggressive treatment, and had favourable outcomes. Primary prevention of smoking/tobacco, dyslipidemias and overweight should be more aggressively promoted in youngs.